



January 15, 2025

New Mexico Oil Conservation Division

New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Closure Request
Sand Dunes South Corridor CTB
Incident Number nAPP2225058146
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Oxy USA Inc. (Oxy), has prepared this *Closure Request* to document assessment, delineation, excavation, and soil sampling activities performed at the Sand Dunes South Corridor CTB (Site). The purpose of the Site assessment, delineation, excavation, and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a produced water release at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, Oxy is submitting this *Closure Request*, describing Site assessment delineation, and excavation activities that have occurred and requesting closure for Incident Number nAPP2225058146.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit B, Section 18, Township 24 South, Range 31 East, in Eddy County, New Mexico (32.22338°, -103.813103°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On August 15, 2022, a water inlet line failed due to corrosion, resulting in the release of approximately 30 barrels (bbls) of produced water on pad. A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 10 bbls of produced water were recovered. Oxy reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on September 22, 2022. The release was assigned Incident Number nAPP2225058146.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization are summarized below and detailed in the NMOCD permitting portal Form C-141 Site Characterization section. The Site Closure Criteria is identified on Figure 4.

Depth to groundwater at the Site is reasonably estimated to be between 51 feet to 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is United States Geological Society (USGS) well 321310103482101, located approximately 0.4 miles southeast of the Site. The depth to water was most recently measured on

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January 17, 2013 and indicated to be 74.44 feet bgs. The associated well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a pond, located approximately 2,232 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Closure criteria is identified on Figure 4.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 10,000 mg/kg

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On June 25, 2024 and July 30, 2024, Ensolum personnel conducted Site delineation activities to evaluate the release extent based on information provided on the Form C-141 and visual observations. Five potholes (PH01 through PH05) were advanced via hydrovac within the release extent to assess the presence or absence of impacted soil. The delineation potholes were advanced to depths ranging from 3 feet to 4 feet bgs. Discrete delineation soil samples were collected from potholes PH01 through PH05 at depths ranging from 0.5 feet to 4 feet bgs. Additionally, seven soil samples (SS01 through SS07) were collected around the release area, at a depth of approximately 0.5 feet bgs to confirm the lateral extent of the release. The Delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations for the potholes were logged on lithologic soil sampling logs, which are included in Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method SM4500.

Laboratory analytical results for potholes PH01 through PH05 indicated all COCs were compliant with the Site Closure Criteria and the Site was vertically delineated to the most stringent Table I Closure Criteria. Laboratory analytical results for soil samples SS01 through SS07 indicated all COCs were compliant with the most stringent Table I Closure Criteria and successfully defined the lateral extent of the release.

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COMPOSITE SAMPLING, EXCAVATION ACTIVITIES, AND LABORATORY ANALYTICAL RESULTS

Between August 20, 2024 and November 4, 2024, Ensolum personnel returned to the Site to collect 5-point composite soil samples every 200 square feet from the release extent. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Eighteen composite soil samples (CS01 through CS18) were collected at a depth of 0.5 feet bgs to confirm the absence of impacted soil. The soil samples were handled and analyzed following the same procedures as described above.

Laboratory analytical results for composite soil samples CS01, CS02, CS04, CS06 through CS09, CS11 through CS13, CS15, and CS16 indicated all COCs were compliant with the Site Closure Criteria. Laboratory analytical results for composite soil samples CS03, CS05, CS10, CS14, CS17, and CS18 indicated TPH and/or chloride concentrations exceeded the Site Closure Criteria. Soil in the vicinity was excavated via hydrovac to a depth of 1-foot bgs. Subsequent composite floor samples FS03 through FS05, FS10, FS14, FS17, and FS18 were collected from the floor of the excavations at a depth of 1-foot bgs. Four sidewall soil samples (SW01 through SW04) were collected from the sidewalls of the excavations at depths ranging from the ground surface to 1-foot bgs. The soil samples were handled and analyzed following the same procedures described above. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 3. Photographic documentation was completed during the Site visits and a photographic log is included as Appendix C.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The floor soil samples FS03, FS04, and FS05 were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following chemical of concern (COC): chloride following EPA Method SM4500. The floor soil samples FS14, FS17, and FS18 were analyzed for the following COCs: TPH-GRO, TPH-DRO, and TPH-ORO following EPA Method 8015M/D; and chloride following EPA Method SM4500. The sidewall samples SW01 through SW04 were analyzed for the following COCs: BTEX following United States EPA Method 8021B; TPH-GRO, TPH-DRO, TPH-ORO following EPA Method 8015M/D; and chloride following EPA Method SM4500.

Laboratory analytical results for soil samples FS03 through FS05, FS10, FS14, FS17, and FS18 indicated all COCs were compliant with the Site Closure Criteria. Laboratory analytical results for sidewall soil samples SW01 through SW04 indicated all COC concentrations were compliant with the most stringent Closure Criteria.

The Excavation areas measured approximately 3,246 square feet. A total of 74 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the Ramirez and Sons Facility in Lea County, New Mexico.

Subsequent to the results of the final confirmation soil sampling, the excavated areas were backfilled with clean fill material and contoured to the original surrounding grade. One representative 5-point composite soil sample (Ramirez & Sons Caliche Pit) was collected from the backfill material prior to use at the Site. Laboratory analytical results for the backfill soil sample confirmed compliance with the NMOCD requirements for the reclaimed area to be non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg and TPH concentrations less than 100 mg/kg. The laboratory analytical results are summarized in the attached Table 2 and the complete laboratory analytical report is included as Appendix D. Since the release area was on an active pad site, final reclamation or revegetation was not required at this time.

CLOSURE REQUEST

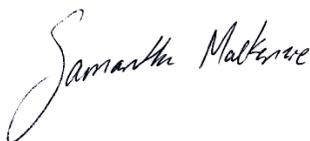
Oxy USA Inc.
Closure Request
Sand Dunes South Corridor CTB

Site assessment and remediation activities were conducted at the Site to address the August 2022 produced water release. Laboratory analytical results for the assessment and excavation activities indicated all COC concentrations were compliant with the Site Closure Criteria. Based on the laboratory analytical results, no further remediation is required at this time.

Depth to groundwater was determined to be between 51 feet to 100 feet bgs within 0.5 miles of the Site and no other sensitive receptors were identified near the release extent. Oxy believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, Oxy respectfully requests closure for Incident Number nAPP2225058146.

If you have any questions or comments, please contact Mr. Beaux Jennings at (210) 219-8858 or bjennings@ensolum.com.

Sincerely,
Ensolum, LLC



Samantha MacKenzie
Staff Geologist



Beaux Jennings
Associate Principal

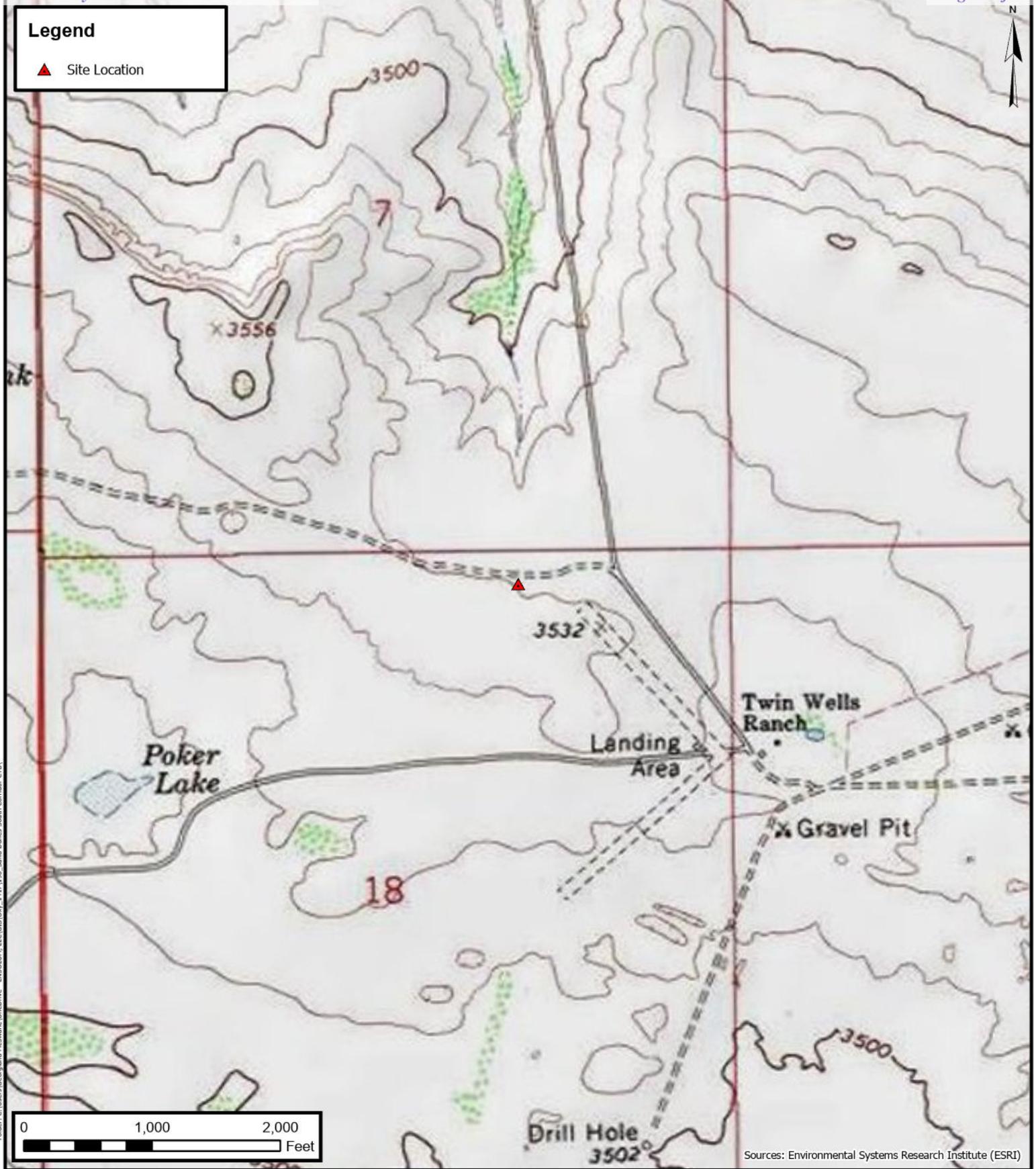
cc: Wade Dittrich, Oxy USA Inc.
Tyson Pierce, Oxy USA Inc.
Bureau of Land Management Office

Appendices:

- Figure 1 Topographic Map
- Figure 2 Site Vicinity Map
- Figure 3 Site Map
- Figure 4 Closure Criteria Map
- Table 1 Soil Sample Analytical Results
- Appendix A Referenced Well Records
- Appendix B Lithologic Soil Sampling Logs
- Appendix C Photographic Log
- Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation



FIGURES



Folder: C:\Users\Georgiana McSwane\OneDrive - ENSOLUM, LLC\GIS\Oxy - 1417198 - Sand Dunes South Corridor CTB



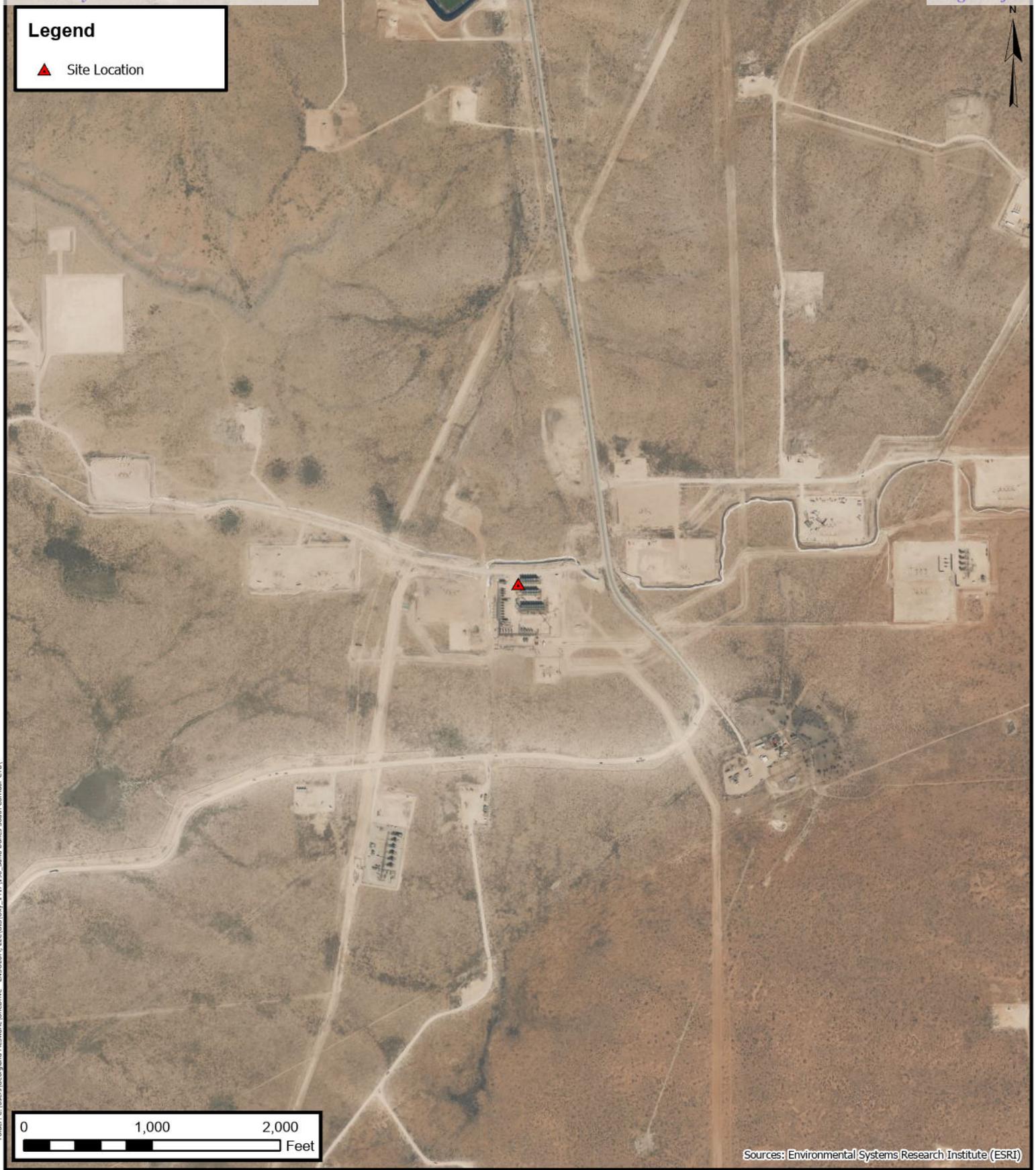
Topographic Map

Oxy USA Inc.
 Sand Dunes South Corridor CTB
 32.22338° N, 103.813103° W
 Eddy County, New Mexico

PROJECT NUMBER: 03B1417198

FIGURE

1



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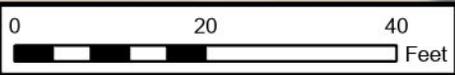
Site Vicinity Map
 Oxy USA Inc.
 Sand Dunes South Corridor CTB
 32.22338° N, 103.813103° W
 Eddy County, New Mexico

PROJECT NUMBER: 03B1417198

FIGURE
2

Legend

- Assessment Soil Sample Location
- Delineation Soil Sample Location
- Confirmation Soil Sample Location
- Excavation Extent selection
- Release Extent



Sources: Environmental Systems Research Institute (ESRI)

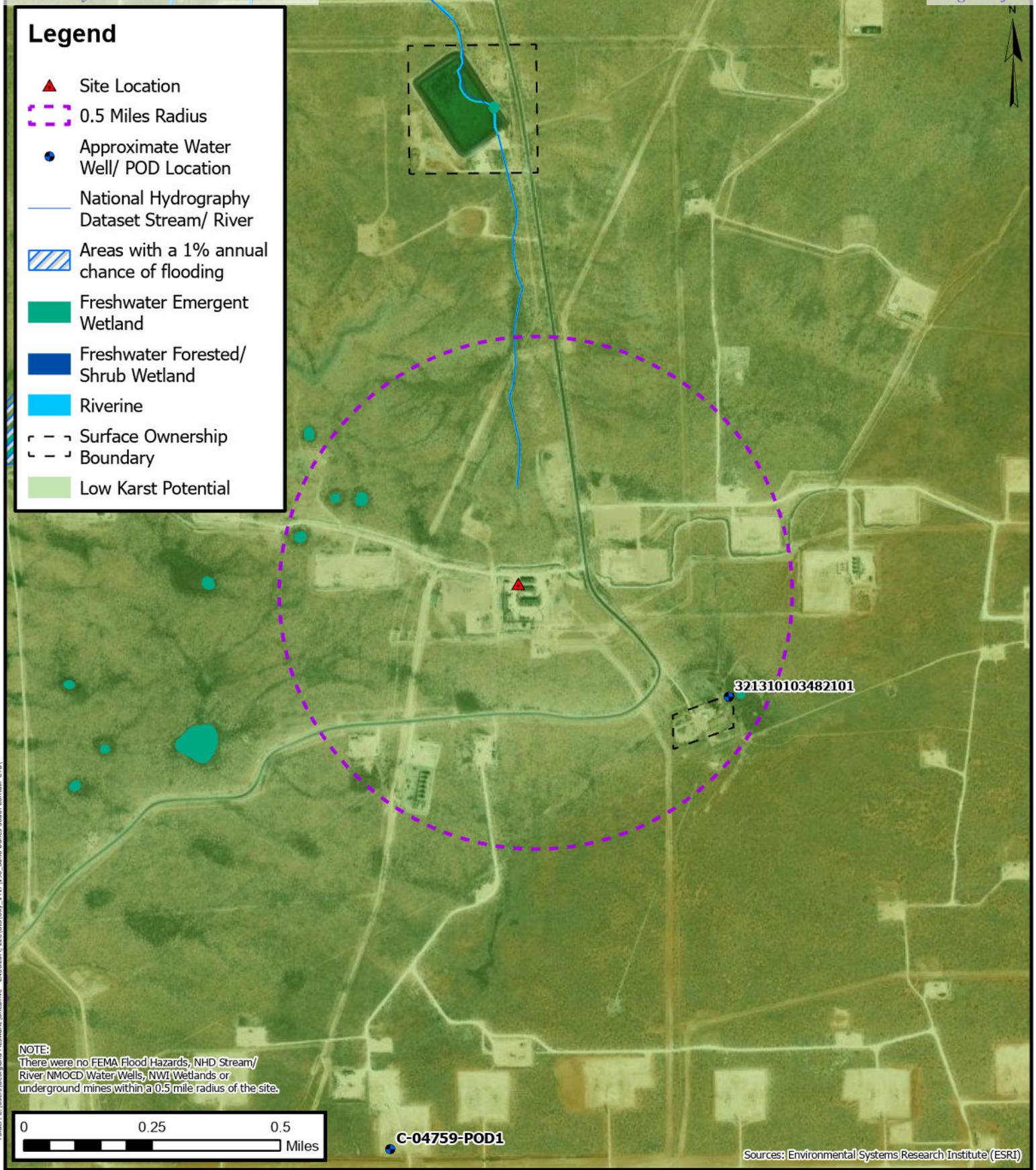


Site Map

Oxy USA Inc.
 Sand Dunes South Corridor CTB
 32.22338° N, 103.813103° W
 Eddy County, New Mexico

PROJECT NUMBER: 03B1417198

FIGURE
3



Folder: C:\Users\Georgiana McSwane\OneDrive - ENSOLUM, LLC\GIS\Oxy - 1417198 - Sand Dunes South Corridor CTB



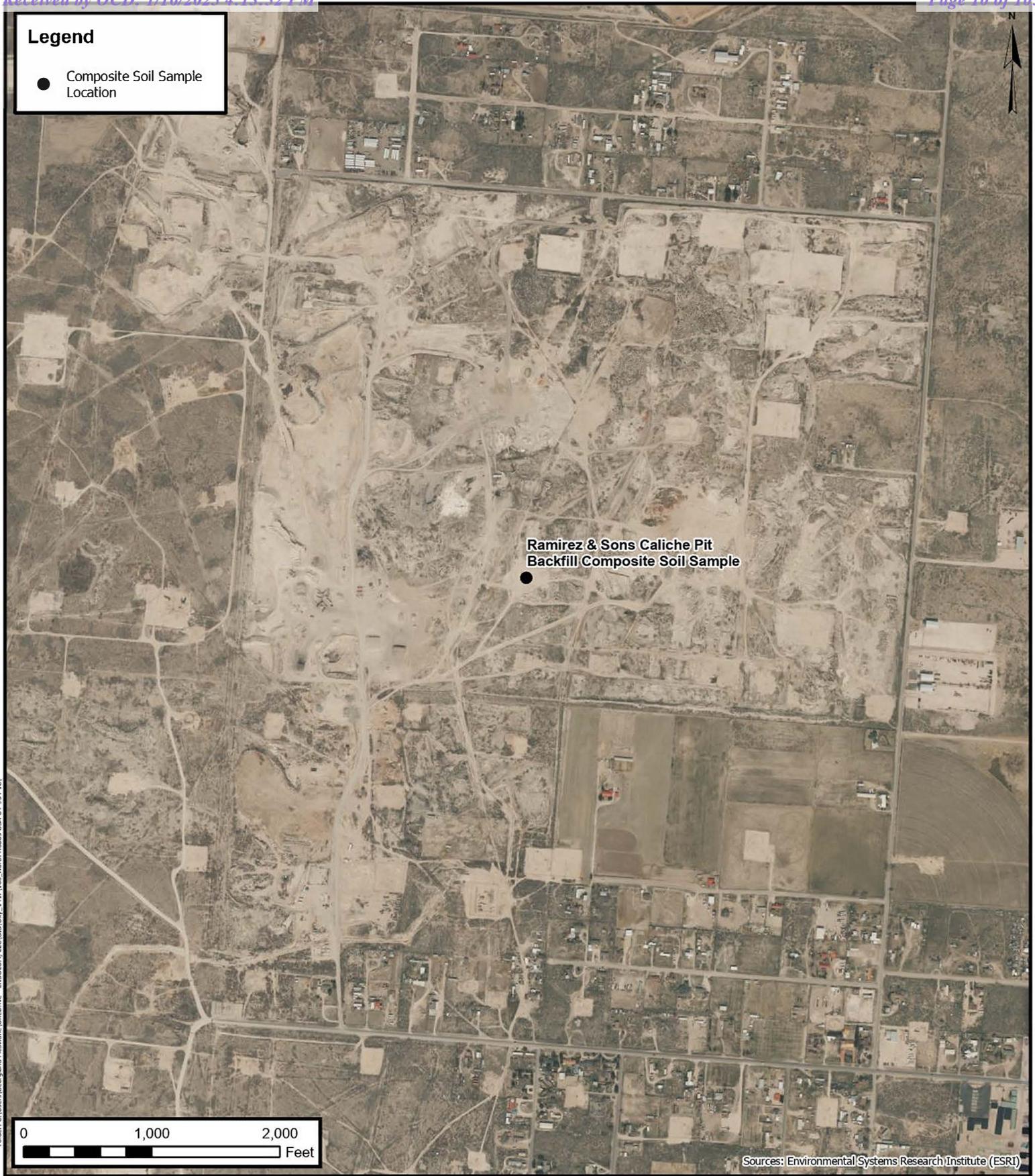
Closure Criteria Map
 Oxy USA Inc.
 Sand Dunes South Corridor CTB
 32.22338° N, 103.813103° W
 Eddy County, New Mexico

PROJECT NUMBER: 03B1417198

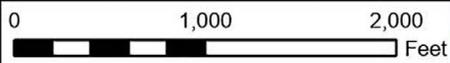
FIGURE
4

Legend

- Composite Soil Sample Location



**Ramirez & Sons Caliche Pit
Backfill Composite Soil Sample**



Sources: Environmental Systems Research Institute (ESRI)

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Backfill Site Map

Ramirez & Sons Caliche Pit
32.736937° N, 103.187229° W
Lea County, New Mexico

ATTACHMENT

5



TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Sand Dunes South Corridor CTB
 Oxy USA, Inc.
 Eddy County, New Mexico
 Ensolum Project No. 03B1417198

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO C ₆ -C ₁₂ (mg/kg)	TPH DRO >C ₁₂ -C ₂₈ (mg/kg)	TPH MRO >C ₂₈ -C ₃₅ (mg/kg)	TPH GRO+DRO C ₆ -C ₂₈ (mg/kg)	TPH Total C ₆ -C ₃₅ (mg/kg)	Chloride (mg/kg)
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
SS01	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	23.0	<10.0	23.0	23.0	32.0
SS02	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS03	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	16.9	<10.0	16.9	16.9	16.0
SS04	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS05	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS06	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS07	07/30/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0

Concentrations in **bold** and yellow exceed the New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release

Concentrations filled in have been excavated

bgs: below ground surface

mg/kg: milligrams per kilogram

NE: Not Established

NS: Not Sampled

mg/kg: milligrams per kilogram

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

MRO: Motor Oil/Lube Oil Range Organics

TPH: Total Petroleum Hydrocarbons

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
Sand Dunes South Corridor CTB
 Oxy USA, Inc.
 Eddy County, New Mexico
 Ensolum Project No. 03B1417198

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO C ₆ -C ₁₂ (mg/kg)	TPH DRO >C ₁₂ -C ₂₈ (mg/kg)	TPH MRO >C ₂₈ -C ₃₅ (mg/kg)	TPH GRO+DRO C ₆ -C ₂₈ (mg/kg)	TPH Total C ₆ -C ₃₅ (mg/kg)	Chloride (mg/kg)
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
Confirmation Soil Sample Analytical Results													
CS01	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	115	43.2	115	158	3,960
CS02	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	22.4	<10.0	22.4	22.4	8,000
CS03	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	28.5	<10.0	28.5	28.5	12,000
FS03	11/04/2024	1	NS										368
CS04	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	216	64.5	216	281	10,000
FS04	11/04/2024	1	NS										512
CS05	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	15.5	<10.0	15.5	15.5	12,600
FS05	11/04/2024	1	NS										160
CS06	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	11.8	<10.0	11.8	11.8	9,400
CS07	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	17.3	<10.0	17.3	17.3	5,330
CS08	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	48.5	18.0	48.5	66.5	3,200
CS09	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	9,200
CS10	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	10,700
FS10	11/04/2024	1	NS										816
CS11	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	3,760
CS12	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	18.4	<10.0	18.4	18.4	848
CS13	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	34.4	12.2	34.4	46.6	2,400

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS
Sand Dunes South Corridor CTB
 Oxy USA, Inc.
 Eddy County, New Mexico
 Ensolum Project No. 03B1417198

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO C ₆ -C ₁₂ (mg/kg)	TPH DRO >C ₁₂ -C ₂₈ (mg/kg)	TPH MRO >C ₂₈ -C ₃₅ (mg/kg)	TPH GRO+DRO C ₆ -C ₂₈ (mg/kg)	TPH Total C ₆ -C ₃₅ (mg/kg)	Chloride (mg/kg)
New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000
CS14	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	3,940	1,040.0	3,940	4,980	3,640
FS14	11/04/2024	1	NS					<10.0	<10.0	<10.0	<10.0	<10.0	NS
CS15	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	40.8	<10.0	40.8	40.8	1,280
CS16	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	45.5	<10.0	45.5	45.5	224
CS17	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	1,810	1,030	1,810	2,840	256
FS17	11/04/2024	1	NS					<10.0	<10.0	<10.0	<10.0	<10.0	NS
CS18	08/20/2024	0.5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	2,220	1,300	2,220	3,520	5,860
FS18	11/04/2024	1	NS					<10.0	<10.0	<10.0	<10.0	<10.0	NS
Sidewall Soil Sample Analytical Results													
SW01	11/04/2024	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
SW02	11/04/2024	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	192
SW03	11/04/2024	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
SW04	11/04/2024	0-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160

Concentrations in **bold** and yellow exceed the New Mexico Oil Conservation Division Closure Criteria for Soils Impacted by a Release

Concentrations filled in have been excavated

bgs: below ground surface

mg/kg: milligrams per kilogram

NE: Not Established

NS: Not Sampled

mg/kg: milligrams per kilogram

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

MRO: Motor Oil/Lube Oil Range Organics

TPH: Total Petroleum Hydrocarbons



APPENDIX A

Referenced Well Records



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category: Geographic Area:

Click to hide News Bulletins

- Explore the *NEW* [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- [Full News](#)

Groundwater levels for New Mexico

Click to hide state-specific text

Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 321310103482101

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321310103482101 24S.31E.17.13120

Eddy County, New Mexico

Latitude 32°13'14.1", Longitude 103°48'23.4" NAD83

Land-surface elevation 3,530.00 feet above NGVD29

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
1959-02-03			D	62610	3459.50	NGVD29	P	Z			A
1959-02-03			D	62611	3461.24	NAVD88	P	Z			A
1959-02-03			D	72019	70.50		P	Z			A
1959-03-25			D	62610	3462.33	NGVD29	1	Z			A
1959-03-25			D	62611	3464.07	NAVD88	1	Z			A
1959-03-25			D	72019	67.67		1	Z			A
1976-12-02			D	62610	3463.98	NGVD29	1	Z			A
1976-12-02			D	62611	3465.72	NAVD88	1	Z			A
1976-12-02			D	72019	66.02		1	Z			A
2013-01-17	21:00 UTC		m	62610	3455.56	NGVD29	1	S	USGS	S	A
2013-01-17	21:00 UTC		m	62611	3457.30	NAVD88	1	S	USGS	S	A
2013-01-17	21:00 UTC		m	72019	74.44		1	S	USGS	S	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined

Section	Code	Description
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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Title: Groundwater for New Mexico: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>



Page Contact Information: [New Mexico Water Data Maintainer](#)

Page Last Modified: 2024-06-12 14:00:33 EDT

0.34 0.31 nadww01



APPENDIX B

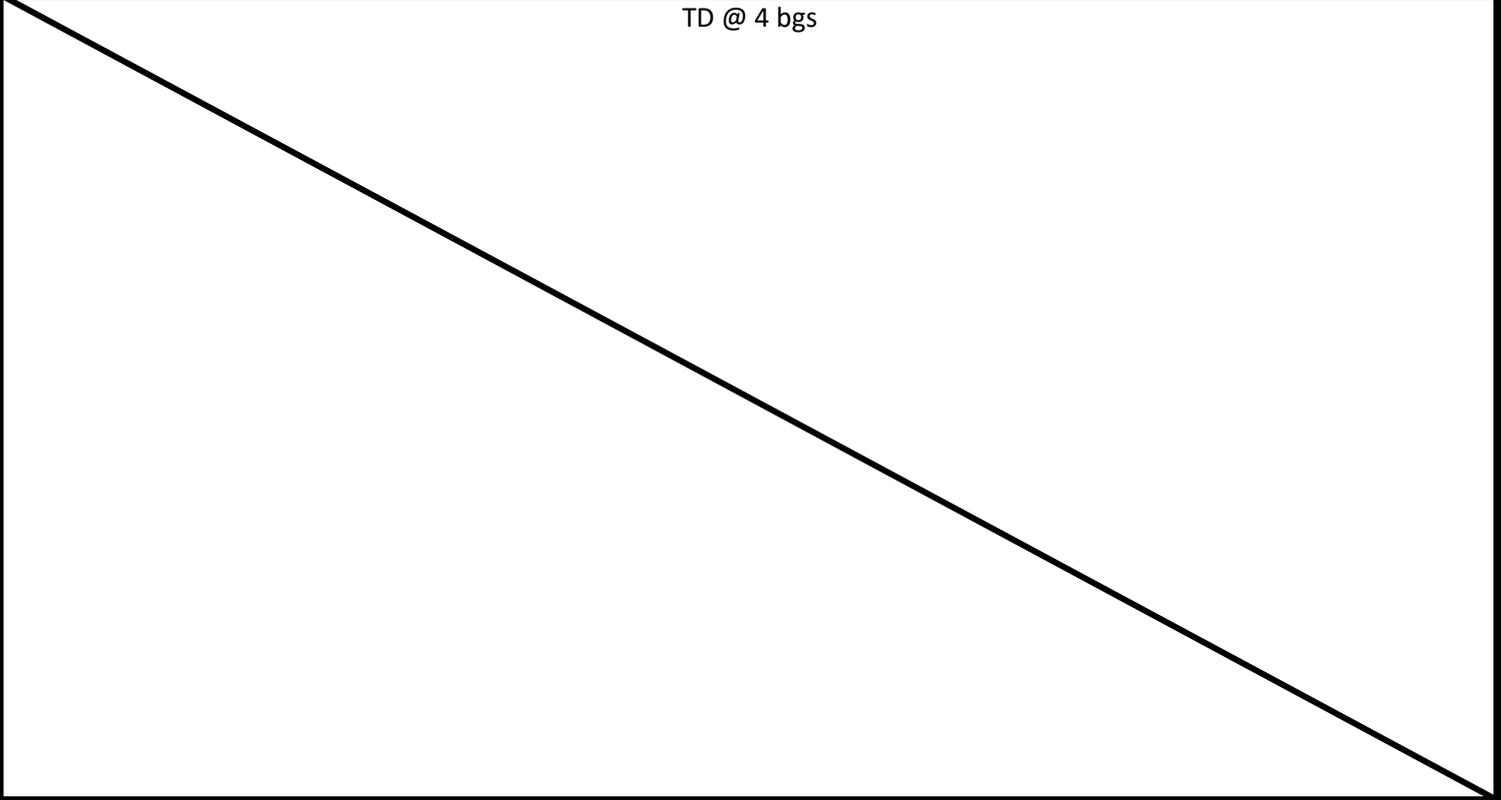
Lithologic Soil Sampling Logs

								Sample Name: PH01		Date: 6/25/2024	
								Site Name: Sand Dunes South Corridor CTB			
								Incident Number: nAPP2225058146			
								Job Number: 03B1417198			
LITHOLOGIC / SOIL SAMPLING LOG											
Coordinates: 32.224042, -103.813316				Logged By: Kaoru Shimada		Method: Hydrovac					
				Hole Diameter: N/A		Total Depth: 3'					
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factors included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0					
D	2,895.2	1.3		PH01	0.5	0.5	GC	Gravel, some clay, noncohesive, low plasticity, beige fine, dry.			
D	2,049.6	4.2		PH01	1	1	CL	Clay, some sand and some gravel, non-cohesive, low plasticity, brown, dry, fine.			
D	1,439.2	1.3		PH01	2	2	CL	Clay, some sand and some gravel, non-cohesive, low plasticity, brown, dry, fine.			
D	610.4	1.2		PH01	3	3	GC	Clayey-gravel, non-cohesive, low plasticity, beige, dry, fine.			
TD @ 3 feet bgs											

					Sample Name: PH02		Date: 6/25/2024					
					Site Name: Sand Dunes South Corridor CTB				Incident Number: nAPP2225058146			
					Job Number: 03B1417198				Logged By: Kaoru Shimada		Method: Hydrovac	
					Coordinates: 32.223990, -103.813441				Hole Diameter: N/A		Total Depth: 4'	
LITHOLOGIC / SOIL SAMPLING LOG												
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factors included.												
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions				
D	1,142.4	3.2		PH02		0						
D	739.2	4.3		PH02		0.5	SC	Clayey sand, some gravel, fine, non-cohesive, low plasticity, beige, dry				
D	610.4	1.4		PH02		1	SC	Clayey-sand, same gravel, fine, non-cohesive, low plasticity, brown, dry				
D	173.6	1		PH02		2	SC	Clayey-sand, some gravel, fine, non-cohesive, low plasticity, brown, dry.				
D	ND	3.2		PH02		3	SC	Clayey-sand, some gravel, fine, non-cohesive, low plasticity, brown, dry.				
D	ND	3.2		PH02		4	SC	Clayey sand, few gravel, fine, non-cohesive, medium plasticity, light beige, dry.				
TD @ 4 bgs												

								Sample Name: PH03	Date: 6/25/2024
								Site Name: Sand Dunes South Corridor CTB	
LITHOLOGIC / SOIL SAMPLING LOG								Incident Number: nAPP2225058146	Job Number: 03B1417198
Coordinates: 32.223906, -103.813505								Logged By: Kaoru Shimada	Method: Hydrovac
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factors included.								Hole Diameter:	Total Depth: 3'
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
						0			
D	1,786.4	3.7		PH03		0.5	SC	Clay-sand, gravel, medium cohesive, low plasticity, light brown, dry.	
D	173.6	2.8		PH03		1	SC	Clay-sand, gravel, medium cohesive, low plasticity, light brown, dry.	
D	ND	2.3		PH03		2	SC	Clay-sand, gravel, medium cohesive, low plasticity, light brown, dry.	
D	ND	2.6		PH03		3	SC	Clay-sand, gravel, medium cohesive, low plasticity, light brown, dry.	
TD @ 3 feet bgs									

		Sample Name: PH04			Date: 6/25/2024			
		Site Name: Sand Dunes South Corridor CTB						
		Incident Number: nAPP2225058146						
		Job Number: 03B1417198						
LITHOLOGIC / SOIL SAMPLING LOG				Logged By: Kaoru Shimada		Method: Hydrovac		
Coordinates: 32.223826, -103.813420				Hole Diameter:		Total Depth: 3'		
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	2,049.6	2.5		PH04		0.5	SC	Clay-sand, fine, few gravel, non-cohesive, low plasticity, light brown, dry.
D	201.6	1		PH04		1	SC	Clay-sand, fine, few gravel, non-cohesive, medium plasticity, beige, dry.
D	201.6	0.7		PH04		2	SC	Clay-sand, fine, few gravel, non-cohesive, medium plasticity, beige, dry.
D	201.6	0.6		PH04		3	SC	Clay-sand, fine, few gravel, non-cohesive, medium plasticity, beige, dry.
TD @ 3 feet bgs								

								Sample Name: PH05	Date: 6/25/2024
								Site Name: Sand Dunes South Corridor CTB	
								Incident Number: nAPP2225058146	
								Job Number: 03B1417198	
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Kaoru Shimada	Method: Hydrovac
Coordinates: 32.223725, -103.813421								Hole Diameter:	Total Depth: 4'
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factors included.									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
D						0			
D	1,663.20	1.8		PH05		0.5	SC	Sandy-clay, some gravel, fine, non-cohesive, low plasticity, dry, beige.	
D	812	2.9		PH05		1	SC	Sandy-clay, some gravel, fine, non-cohesive, low plasticity, dry, dark brown.	
D	235.2	2.7		PH05		2	SC	Sandy-clay, some gravel, fine, non-cohesive, low plasticity, dry, dark brown.	
D	ND	1.9		PH05		3	SC	Sandy-clay, some gravel, fine, non-cohesive, low plasticity, dry, dark brown.	
D						4	SC	Sandy-clay, some gravel, fine, non-cohesive, low plasticity, dry, dark brown.	
TD @ 4 bgs									
									



APPENDIX C

Photographic Log



Photographic Log

Oxy USA Inc.

Sand Dunes South Corridor CTB

Incident Number nAPP2225058146



Photograph: 1 Date: 7/11/2024
 Description: Release footprint
 View: Northeast

Photograph: 2 Date: 7/11/2024
 Description: Release footprint
 View: Northeast



Photograph: 3 Date: 11/5/2024
 Description: Excavation Activites
 View: Northeast

Photograph: 4 Date: 11/5/2024
 Description: Excavation Activites
 View: Northwest



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

July 02, 2024

BEAUX JENNINGS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: SAND DUNES SOUTH CORRIDOR CTB

Enclosed are the results of analyses for samples received by the laboratory on 06/25/24 15:02.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH01 0.5 (H243803-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	181	90.3	200	2.57	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	161	80.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 96.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.8 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH01 1 (H243803-02)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2280	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 94.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.9 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH01 2 (H243803-03)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1550	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 94.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH01 3 (H243803-04)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH02 0.5 (H243803-05)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1200	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 99.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH02 1 (H243803-06)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH02 2 (H243803-07)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	07/01/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH02 3 (H243803-08)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	07/01/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH02 4 (H243803-09)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/01/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 93.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH03 0.5 (H243803-10)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2400	16.0	07/01/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH03 2 (H243803-11)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	07/01/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH03 3 (H243803-12)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/01/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH05 1 (H243803-13)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1730	16.0	07/01/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	73.7	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH05 3 (H243803-14)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	07/01/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH05 4 (H243803-15)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/01/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH04 0.5 (H243803-16)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1960	16.0	07/01/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH04 1 (H243803-17)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63	
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00	
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78	
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64	
Total BTEX	<0.300	0.300	07/01/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	07/01/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415	
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54	
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM
 BEAUX JENNINGS
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	06/25/2024	Sampling Date:	06/25/2024
Reported:	07/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	32.55793,-103.19143		

Sample ID: PH04 3 (H243803-18)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/01/2024	ND	2.03	102	2.00	1.63		
Toluene*	<0.050	0.050	07/01/2024	ND	1.98	98.8	2.00	2.00		
Ethylbenzene*	<0.050	0.050	07/01/2024	ND	2.08	104	2.00	1.78		
Total Xylenes*	<0.150	0.150	07/01/2024	ND	6.09	102	6.00	1.64		
Total BTEX	<0.300	0.300	07/01/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	07/01/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/01/2024	ND	213	107	200	0.415		
DRO >C10-C28*	<10.0	10.0	07/01/2024	ND	191	95.4	200	3.54		
EXT DRO >C28-C36	<10.0	10.0	07/01/2024	ND						

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Ensolum, LLC **BILL TO** ANALYSIS REQUEST

Project Manager: Beaux Jennings P.O. #: Company: OXY USA
Address: 601 N. Marlenfeld St. STE 400 City: Midland State: TX Zip: 79701 Attn: Wade Ditrich
Phone #: (210)219-8858 Email: bjennings@ensolum.com

Project #: 03B1417178 Project Owner: City: State: Zip:
Project Name: Sand Dunes South Corridor CTS
Project Location: State: Zip:
Sampler Name: Kaoru Shinada Phone #: Email:

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX 8021B	TPH 8015M	Chloride 4500
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER : ACID/BASE:					
11	PH03	2	6	1	X						5-25-24	11:14	X	X	X
12	PH03	3	1	1	X						5-25-24	11:19	X	X	X
13	PH05	3	1	1	X						5-25-24	11:32	X	X	X
14	PH05	3	1	1	X						5-25-24	11:41	X	X	X
15	PH05	4	1	1	X						5-25-24	11:49	X	X	X
16	PH04	4.5	1	1	X						5-25-24	12:56	X	X	X
17	PH04	1	1	1	X						5-25-24	1:03	X	X	X
18	PH07	3	1	1	X						5-25-24	1:31	X	X	X

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Relinquished By: Kaoru Shinada Date: 5-25-24 Time: 15:03
Received By: Spoke Rigwell Date: _____ Time: _____
REMARKS: Paykey/AE/NonAFE: _____

Delivered By: (Circle One) UPS Corrected Temp. 5.3i Sample Condition: Intact X No No
Checked By: SR (Initials)
Thermostat Time: Standard Backup (only) Sample Condition: Yes No
Thermometer ID: #173 Correction Factor: 0.0 No No No No
Add'l Phone #: _____

FORM-006 R 3.2 10/07/21 + Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinalabsnm.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 02, 2024

KELLY LOWERY
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: SAND DUNES SOUTH CORRIDOR CTB

Enclosed are the results of analyses for samples received by the laboratory on 07/30/24 12:53.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 01 0.5' (H244524-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2024	ND	1.90	95.0	2.00	0.283	
Toluene*	<0.050	0.050	07/30/2024	ND	1.87	93.6	2.00	0.559	
Ethylbenzene*	<0.050	0.050	07/30/2024	ND	1.92	96.2	2.00	2.18	
Total Xylenes*	<0.150	0.150	07/30/2024	ND	5.67	94.4	6.00	2.47	
Total BTEX	<0.300	0.300	07/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2024	ND	194	96.9	200	1.26	
DRO >C10-C28*	23.0	10.0	07/30/2024	ND	193	96.5	200	6.74	
EXT DRO >C28-C36	<10.0	10.0	07/30/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 02 0.5' (H244524-02)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2024	ND	1.90	95.0	2.00	0.283	
Toluene*	<0.050	0.050	07/30/2024	ND	1.87	93.6	2.00	0.559	
Ethylbenzene*	<0.050	0.050	07/30/2024	ND	1.92	96.2	2.00	2.18	
Total Xylenes*	<0.150	0.150	07/30/2024	ND	5.67	94.4	6.00	2.47	
Total BTEX	<0.300	0.300	07/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2024	ND	194	96.9	200	1.26	
DRO >C10-C28*	<10.0	10.0	07/30/2024	ND	193	96.5	200	6.74	
EXT DRO >C28-C36	<10.0	10.0	07/30/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 03 0.5' (H244524-03)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2024	ND	1.90	95.0	2.00	0.283	
Toluene*	<0.050	0.050	07/30/2024	ND	1.87	93.6	2.00	0.559	
Ethylbenzene*	<0.050	0.050	07/30/2024	ND	1.92	96.2	2.00	2.18	
Total Xylenes*	<0.150	0.150	07/30/2024	ND	5.67	94.4	6.00	2.47	
Total BTEX	<0.300	0.300	07/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2024	ND	194	96.9	200	1.26	
DRO >C10-C28*	16.9	10.0	07/30/2024	ND	193	96.5	200	6.74	
EXT DRO >C28-C36	<10.0	10.0	07/30/2024	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 04 0.5' (H244524-04)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2024	ND	1.90	95.0	2.00	0.283	
Toluene*	<0.050	0.050	07/30/2024	ND	1.87	93.6	2.00	0.559	
Ethylbenzene*	<0.050	0.050	07/30/2024	ND	1.92	96.2	2.00	2.18	
Total Xylenes*	<0.150	0.150	07/30/2024	ND	5.67	94.4	6.00	2.47	
Total BTEX	<0.300	0.300	07/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2024	ND	194	96.9	200	1.26	
DRO >C10-C28*	<10.0	10.0	07/30/2024	ND	193	96.5	200	6.74	
EXT DRO >C28-C36	<10.0	10.0	07/30/2024	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 05 0.5' (H244524-05)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2024	ND	1.90	95.0	2.00	0.283	
Toluene*	<0.050	0.050	07/30/2024	ND	1.87	93.6	2.00	0.559	
Ethylbenzene*	<0.050	0.050	07/30/2024	ND	1.92	96.2	2.00	2.18	
Total Xylenes*	<0.150	0.150	07/30/2024	ND	5.67	94.4	6.00	2.47	
Total BTEX	<0.300	0.300	07/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/30/2024	ND	194	96.9	200	1.26	
DRO >C10-C28*	<10.0	10.0	07/30/2024	ND	193	96.5	200	6.74	
EXT DRO >C28-C36	<10.0	10.0	07/30/2024	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 06 0.5' (H244524-06)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/30/2024	ND	1.90	95.0	2.00	0.283	
Toluene*	<0.050	0.050	07/30/2024	ND	1.87	93.6	2.00	0.559	
Ethylbenzene*	<0.050	0.050	07/30/2024	ND	1.92	96.2	2.00	2.18	
Total Xylenes*	<0.150	0.150	07/30/2024	ND	5.67	94.4	6.00	2.47	
Total BTEX	<0.300	0.300	07/30/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/30/2024	Sampling Date:	07/30/2024
Reported:	08/02/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SS 07 0.5' (H244524-07)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/31/2024	ND	1.93	96.6	2.00	1.02	
Toluene*	<0.050	0.050	07/31/2024	ND	1.89	94.6	2.00	1.64	
Ethylbenzene*	<0.050	0.050	07/31/2024	ND	1.91	95.6	2.00	2.06	
Total Xylenes*	<0.150	0.150	07/31/2024	ND	5.66	94.3	6.00	1.67	
Total BTEX	<0.300	0.300	07/31/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/31/2024	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/31/2024	ND	216	108	200	3.03	
DRO >C10-C28*	<10.0	10.0	07/31/2024	ND	189	94.3	200	11.9	
EXT DRO >C28-C36	<10.0	10.0	07/31/2024	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

Project Manager: ~~Beau Jennings~~ Hadlie Green

Address: 601 N. Marland St. STE 400

City: Midland State: TX Zip: 79701

Phone #: 240-240-8868 432-557-8885 FAX#:

Project #: D3B1417198 Project Owner:

Project Name: Sand dunes South Corridor CTB

Project Location: Jal, NM

Sample Name: Tabitha Guardian

FOR LAB USE ONLY

BILL TO
 P.O. #: _____
 Company: Oxy USA, Inc.
 Attn: Wade Dittich
 Address: _____
 City: _____
 State: _____ Zip: _____
 Phone #: 575-390-2828
 Fax #: _____

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	BTEX 8021	TPH 8015	Chloride 4500
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
H944524	5561	0.5'	G	1	X							7/30/24	0930	X	X	X
	5502	0.5'	G	1	X								0932	X	X	X
	5503	0.5'	G	1	X								0934	X	X	X
	5504	0.5'	G	1	X								0936	X	X	X
	5505	0.5'	G	1	X								0938	X	X	X
	5506	0.5'	G	1	X								0940	X	X	X
	5507	0.5'	G	1	X								0942	X	X	X

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Relinquished By: *[Signature]*
 Date: 7/30/24
 Received By: *[Signature]*
 Date: 8/5/24

Verbal Result: Yes No Add'l Phone #: _____
 All Results are emailed. Please provide Email address: BeauJennings@ensolum.com hgreen@ensolum.com and Smackenzie@ensolum.com
 REMARKS: _____

Delivered By: (Circle One) Observed Temp. °C: 3.7°C
 Corrected Temp. °C: _____
 Sample Condition: Cool Intact
 Checked By: *[Signature]*
 Turnaround Time: Standard Rush
 Bacteria (only) Sample Condition: Yes No
 Corrected Temp. °C: _____

† Cardinal cannot accept verbal changes. Please email changes to celej.keene@cardinallabsnm.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

August 26, 2024

KELLY LOWERY
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: SAND DUNES SOUTH CORRIDOR CTB

Enclosed are the results of analyses for samples received by the laboratory on 08/20/24 12:53.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive.

Mike Snyder For Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 01 0.5 (H245053-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63	
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3960	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01	
DRO >C10-C28*	115	10.0	08/21/2024	ND	220	110	200	1.56	
EXT DRO >C28-C36	43.2	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 72.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.3 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 02 0.5 (H245053-02)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63	
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8000	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01	
DRO >C10-C28*	22.4	10.0	08/21/2024	ND	220	110	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 86.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 03 0.5 (H245053-03)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63	
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	08/22/2024	ND	432	108	400	3.64	QM-07

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01	
DRO >C10-C28*	28.5	10.0	08/21/2024	ND	220	110	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 82.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 04 0.5 (H245053-04)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63	
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10000	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01	
DRO >C10-C28*	216	10.0	08/21/2024	ND	220	110	200	1.56	
EXT DRO >C28-C36	64.5	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 77.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 05 0.5 (H245053-05)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63	
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12600	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01	
DRO >C10-C28*	15.5	10.0	08/21/2024	ND	220	110	200	1.56	
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 98.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 06 0.5 (H245053-06)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63		
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9400	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01		
DRO >C10-C28*	11.8	10.0	08/21/2024	ND	220	110	200	1.56		
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND						

Surrogate: 1-Chlorooctane 89.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 07 0.5 (H245053-07)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63		
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5330	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01		
DRO >C10-C28*	17.3	10.0	08/21/2024	ND	220	110	200	1.56		
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND						

Surrogate: 1-Chlorooctane 91.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 08 0.5 (H245053-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63	
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3200	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01	
DRO >C10-C28*	48.5	10.0	08/21/2024	ND	220	110	200	1.56	
EXT DRO >C28-C36	18.0	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 86.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 09 0.5 (H245053-09)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63		
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9200	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01		
DRO >C10-C28*	<10.0	10.0	08/21/2024	ND	220	110	200	1.56		
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND						

Surrogate: 1-Chlorooctane 86.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 10 0.5 (H245053-10)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63		
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10700	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	220	110	200	2.01		
DRO >C10-C28*	<10.0	10.0	08/21/2024	ND	220	110	200	1.56		
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND						

Surrogate: 1-Chlorooctane 77.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.6 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 11 0.5 (H245053-11)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63		
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3760	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/22/2024	ND	220	110	200	2.01		
DRO >C10-C28*	<10.0	10.0	08/22/2024	ND	220	110	200	1.56		
EXT DRO >C28-C36	<10.0	10.0	08/22/2024	ND						

Surrogate: 1-Chlorooctane 70.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.5 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 12 0.5 (H245053-12)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.18	109	2.00	5.63		
Toluene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	5.93		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.08	104	2.00	6.47		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.15	103	6.00	6.32		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	848	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/22/2024	ND	220	110	200	2.01		
DRO >C10-C28*	18.4	10.0	08/22/2024	ND	220	110	200	1.56		
EXT DRO >C28-C36	<10.0	10.0	08/22/2024	ND						

Surrogate: 1-Chlorooctane 78.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.7 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 13 0.5 (H245053-13)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.02	101	2.00	0.745		
Toluene*	<0.050	0.050	08/21/2024	ND	2.10	105	2.00	0.614		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.14	107	2.00	0.326		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.66	111	6.00	0.244		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2400	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	239	120	200	1.67		
DRO >C10-C28*	34.4	10.0	08/21/2024	ND	229	114	200	2.64		
EXT DRO >C28-C36	12.2	10.0	08/21/2024	ND						

Surrogate: 1-Chlorooctane 81.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.2 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 14 0.5 (H245053-14)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/21/2024	ND	2.02	101	2.00	0.745		
Toluene*	<0.050	0.050	08/21/2024	ND	2.10	105	2.00	0.614		
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.14	107	2.00	0.326		
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.66	111	6.00	0.244		
Total BTEX	<0.300	0.300	08/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3640	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	239	120	200	1.67			
DRO >C10-C28*	3940	10.0	08/21/2024	ND	229	114	200	2.64			
EXT DRO >C28-C36	1040	10.0	08/21/2024	ND							

Surrogate: 1-Chlorooctane 84.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 152 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 15 0.5 (H245053-15)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.02	101	2.00	0.745	
Toluene*	<0.050	0.050	08/21/2024	ND	2.10	105	2.00	0.614	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.14	107	2.00	0.326	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.66	111	6.00	0.244	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	239	120	200	1.67	
DRO >C10-C28*	40.8	10.0	08/21/2024	ND	229	114	200	2.64	
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 79.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.8 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 16 0.5 (H245053-16)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.02	101	2.00	0.745	
Toluene*	<0.050	0.050	08/21/2024	ND	2.10	105	2.00	0.614	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.14	107	2.00	0.326	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.66	111	6.00	0.244	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	239	120	200	1.67	
DRO >C10-C28*	45.5	10.0	08/21/2024	ND	229	114	200	2.64	
EXT DRO >C28-C36	<10.0	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 89.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 17 0.5 (H245053-17)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/22/2024	ND	2.02	101	2.00	0.745		
Toluene*	<0.050	0.050	08/22/2024	ND	2.10	105	2.00	0.614		
Ethylbenzene*	<0.050	0.050	08/22/2024	ND	2.14	107	2.00	0.326		
Total Xylenes*	<0.150	0.150	08/22/2024	ND	6.66	111	6.00	0.244		
Total BTEX	<0.300	0.300	08/22/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	08/22/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	239	120	200	1.67			
DRO >C10-C28*	1810	10.0	08/21/2024	ND	229	114	200	2.64			
EXT DRO >C28-C36	1030	10.0	08/21/2024	ND							

Surrogate: 1-Chlorooctane 93.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 164 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	08/20/2024	Sampling Date:	08/20/2024
Reported:	08/26/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Shalyn Rodriguez
Project Location:	OXY 32.223643, -103.812787		

Sample ID: CS 18 0.5 (H245053-18)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/21/2024	ND	2.02	101	2.00	0.745	
Toluene*	<0.050	0.050	08/21/2024	ND	2.10	105	2.00	0.614	
Ethylbenzene*	<0.050	0.050	08/21/2024	ND	2.14	107	2.00	0.326	
Total Xylenes*	<0.150	0.150	08/21/2024	ND	6.66	111	6.00	0.244	
Total BTEX	<0.300	0.300	08/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5860	16.0	08/22/2024	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	08/21/2024	ND	239	120	200	1.67	
DRO >C10-C28*	2220	10.0	08/21/2024	ND	229	114	200	2.64	
EXT DRO >C28-C36	1300	10.0	08/21/2024	ND					

Surrogate: 1-Chlorooctane 85.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 131 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-05 The surrogate recovery is outside of lab established statistical control limits but still within method limits. Data is not adversely affected.
S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
** Samples not received at proper temperature of 6°C or below.
*** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Handwritten signature of Mike Snyder

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

Company Name: Ensolum, LLC		Project Manager: Beaux Jennings		P.O. #:		BILL TO		ANALYSIS REQUEST							
Address: 601 N. Marlandfield St. STE 400		City: Midland State: TX Zip: 79701		Company: OXY USA											
Phone #: (210)219-8858		Email: bjennings@ensolum.com		Attn: Wade Ditch											
Project #: 03141395		Project Owner: Sam Daves South Corridor CTS		Address:											
Project Location:		City:		State:		Zip:									
Sampler Name: Kaoru Shimada		Email:		Phone #:											
FOR LAB USE ONLY		Sample Depth (feet)		MATRIX		PRESERV.		SAMPLING							
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER : ACID/BASE: ICE / COOL OTHER :	DATE	TIME	BTEX 8021B	TPH 8015M	Chloride 4500	Hold
1845053	CS01	0.5	1	X						2-20-24	916	X	X	X	
2	CS02	1	1	X							917	X	X	X	
3	CS03	1	1	X							918	X	X	X	
4	CS04	1	1	X							919	X	X	X	
5	CS05	1	1	X							919	X	X	X	
6	CS06	1	1	X							920	X	X	X	
7	CS07	1	1	X							920	X	X	X	
8	CS08	1	1	X							921	X	X	X	
9	CS09	1	1	X							922	X	X	X	
10	CS10	1	1	X							922	X	X	X	

PLEASE NOTE: Laboratory and client's exclusive remedy for any claim arising from this report is limited to the amount paid by the client for the analysis. All claims including those for negligence and any other claims whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Kaoru Shimada
 Date: 2-20-24
 Title: 1853
 Received By: Spodkrony
 Date: 2-20-24
 Title: 1853
 Received By: Spodkrony
 Date: 2-20-24
 Title: 1853

Delivered By: (Circle One) UPS - Bus - Other: 35
 Observed Temp. °C: 41
 Corrected Temp. °C: 35
 Sample Condition: Cool In tact
 Checked By: SR
 Remarks: PayKey/A/FENonAFE

Thermometer ID: #1140
 Correction Factor: -0.0 °C
 Standard Observed Temp. °C
 Add'l Phone #:

Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.2 10/07/21



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

Company Name: Ensolum, LLC
 Project Manager: Beaux Jennings
 Address: 601 N. Marland St. STE 400
 City: Midland State: TX Zip: 79701
 Phone #: (210)219-9858 Email: bjennings@ensolum.com
 Project #: 03BH1198 Project Owner: *Sand Dunes South Corridor (SR)*
 Project Name: *Sand Dunes South Corridor (SR)*
 Project Location: *Sand Dunes South Corridor (SR)*
 Sampler Name: Kaoru Shimada
 FOR LAB USE ONLY

BILL TO P.O. #: Company: OXY USA
 Attn: Wade Dittrich
 Address: City: State: Zip:
ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX 8021B	TPH 8015M	Chloride 4500	Hold
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :						
1845053	0511	10.5	1	1							8-20-14	923	✓	✓	✓	
	12	7	1	1							8-20-14	924	✓	✓	✓	
	13	14	1	1							8-20-14	925	✓	✓	✓	
	14	15	1	1							8-20-14	926	✓	✓	✓	
	15	16	1	1							8-20-14	927	✓	✓	✓	
	16	17	1	1							8-20-14	928	✓	✓	✓	
	17	18	1	1							8-20-14	929	✓	✓	✓	
	18	18	1	1							8-20-14	929	✓	✓	✓	

PLEASE NOTE: Quality and quantity. Cardinal's standard direct analysis method for water and soil detection based on color or turbidity is not to be used for the analysis. All data including those for negligence and any other cause whatsoever shall be deemed valid and binding and shall not be subject to challenge or dispute in any court of law. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruption, loss of data, or other damages, arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: *Kaoru Shimada* Date: *8-20-14* Received By: *Sheel Kishorey* Date: *8-20-14*
 Delivered By: (Circle One) UPS Bus Other
 Observed Temp. °C: *41.1* Corrected Temp. °C: *3.5*
 Sample Condition: Cool Intact No Yes
 CHECKED BY: (Initials) *SK*
 Remarks: *PayKey/AFFE/NonAFE*
 Verbal Result: Yes No
 All Results are emailed. Please provide Email address: *bjennings@ensolum.com, smackenzie@ensolum.com*
 Thermometer ID: *#140* Correction Factor: *-0.10*
 Thermometer ID: *#140* Correction Factor: *-0.10*
 Add'l Phone #: Yes No Yes No

FORM-006 R.3.2.1007/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 13, 2024

SAMANTHA MACKENZIE
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: SAND DUNES SOUTH CORRIDOR CTB

Enclosed are the results of analyses for samples received by the laboratory on 11/07/24 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	11/07/2024	Sampling Date:	11/04/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Tamara Oldaker
Project Location:	OXY 32.223643, -103.812787		

Sample ID: FS 03 1' (H246799-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	11/11/2024	ND	416	104	400	3.77	

Sample ID: FS 04 1' (H246799-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	11/11/2024	ND	416	104	400	3.77	

Sample ID: FS 05 1' (H246799-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	11/11/2024	ND	416	104	400	3.77	

Sample ID: FS 10 1' (H246799-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	11/11/2024	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	11/07/2024	Sampling Date:	11/04/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Tamara Oldaker
Project Location:	OXY 32.223643, -103.812787		

Sample ID: FS 14 1' (H246799-05)

TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					
<hr/>									
Surrogate: 1-Chlorooctane	130 %	48.2-134							
Surrogate: 1-Chlorooctadecane	136 %	49.1-148							

Sample ID: FS 17 1' (H246799-06)

TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					
<hr/>									
Surrogate: 1-Chlorooctane	122 %	48.2-134							
Surrogate: 1-Chlorooctadecane	126 %	49.1-148							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received: 11/07/2024
 Reported: 11/13/2024
 Project Name: SAND DUNES SOUTH CORRIDOR CTB
 Project Number: 03B1417198
 Project Location: OXY 32.223643, -103.812787

Sampling Date: 11/04/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: FS 18 1' (H246799-07)

TPH 8015M	mg/kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					
Surrogate: 1-Chlorooctane	120 %	48.2-134							
Surrogate: 1-Chlorooctadecane	123 %	49.1-148							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	11/07/2024	Sampling Date:	11/04/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Tamara Oldaker
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SW 01 0-1' (H246799-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2024	ND	2.09	104	2.00	5.53	
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	11/11/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/11/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/11/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/11/2024	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	11/07/2024	Sampling Date:	11/04/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Tamara Oldaker
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SW 02 0-1' (H246799-09)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2024	ND	2.09	104	2.00	5.53		
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30		
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93		
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88		
Total BTEX	<0.300	0.300	11/10/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	11/11/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/08/2024	ND	172	86.2	200	15.9		
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54		
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND						

Surrogate: 1-Chlorooctane 130 % 48.2-134

Surrogate: 1-Chlorooctadecane 136 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	11/07/2024	Sampling Date:	11/04/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Tamara Oldaker
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SW 03 0-1' (H246799-10)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2024	ND	2.09	104	2.00	5.53	
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	11/11/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 127 % 48.2-134

Surrogate: 1-Chlorooctadecane 132 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 SAMANTHA MACKENZIE
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	11/07/2024	Sampling Date:	11/04/2024
Reported:	11/13/2024	Sampling Type:	Soil
Project Name:	SAND DUNES SOUTH CORRIDOR CTB	Sampling Condition:	Cool & Intact
Project Number:	03B1417198	Sample Received By:	Tamara Oldaker
Project Location:	OXY 32.223643, -103.812787		

Sample ID: SW 04 0-1' (H246799-11)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2024	ND	2.09	104	2.00	5.53	
Toluene*	<0.050	0.050	11/10/2024	ND	1.99	99.3	2.00	5.30	
Ethylbenzene*	<0.050	0.050	11/10/2024	ND	1.98	99.1	2.00	4.93	
Total Xylenes*	<0.150	0.150	11/10/2024	ND	5.87	97.9	6.00	4.88	
Total BTEX	<0.300	0.300	11/10/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	11/11/2024	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/08/2024	ND	172	86.2	200	15.9	
DRO >C10-C28*	<10.0	10.0	11/08/2024	ND	183	91.4	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	11/08/2024	ND					

Surrogate: 1-Chlorooctane 129 % 48.2-134

Surrogate: 1-Chlorooctadecane 134 % 49.1-148

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCS/D recovery and/or RPD values.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
** Samples not received at proper temperature of 6°C or below.
*** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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*=Accredited Analyte

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
 (575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

BILL TO

ANALYSIS REQUEST

1/2

Project Manager: Beate Jennings Samantha Mackenzie

P.O. #:

Address: 601 N Marientfeld Street, Suite 400

Company: Oxy USA Inc.

City: Midland

State: TX Zip: 79701

Attn: Wade Dittrich

Phone #: 210-219-8858

Fax #:

Address:

Project #: 03B1417198

Project Owner:

City:

Project Name: Sand Dunes South Corridor CTB

State: Zip:

Project Location: Eddy County

Phone #: 575-390-2828

Sampler Name: Tabitha Goodwin

Fax #:

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	BTX	TPH	Chloride
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
<u>H246793</u>	<u>ES03</u>	<u>1'</u>	<u>C1</u>	<u>1</u>			<u>X</u>					<u>11/4/24</u>	<u>1050</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>ES04</u>	<u>1'</u>	<u>C1</u>	<u>1</u>									<u>1102</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>ES05</u>	<u>1'</u>	<u>C1</u>	<u>1</u>									<u>1108</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>ES10</u>	<u>1'</u>	<u>C1</u>	<u>1</u>									<u>1315</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>ES14</u>	<u>1'</u>	<u>C1</u>	<u>1</u>									<u>1038</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>ES17</u>	<u>1'</u>	<u>C1</u>	<u>1</u>									<u>1016</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>ES18</u>	<u>1'</u>	<u>C1</u>	<u>1</u>									<u>1006</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>SM01</u>	<u>0-1'</u>	<u>C1</u>	<u>1</u>									<u>1018</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>SM02</u>	<u>0-1'</u>	<u>C1</u>	<u>1</u>									<u>1040</u>	<u>X</u>	<u>X</u>	<u>X</u>
	<u>SM03</u>	<u>0-1'</u>	<u>C1</u>	<u>1</u>									<u>1112</u>	<u>X</u>	<u>X</u>	<u>X</u>

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Relinquished By: [Signature] Date: 11/5/24 Time: 1310

Received By: [Signature] Date: 11-7-24 Time: 1410

Delivered By: (Circle One) UPS Observed Temp. °C: 8.3 Corrected Temp. °C: 1.9

Turnaround Time: Standard Rush Bacteria (only) Sample Condition Observed Temp. °C Corrected Temp. °C

Sampler - UPS - Bus - Other: UPS

Thermometer ID # 4434 Correction Factor 0.6°C

Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 25, 2024

KELLY LOWERY
ENSOLUM, LLC
705 W WADLEY AVE.
MIDLAND, TX 79705

RE: RAMIREZ & SONS CALICHE PIT

Enclosed are the results of analyses for samples received by the laboratory on 09/20/24 13:03.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

ENSOLUM, LLC
 KELLY LOWERY
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	09/20/2024	Sampling Date:	09/19/2024
Reported:	09/25/2024	Sampling Type:	Soil
Project Name:	RAMIREZ & SONS CALICHE PIT	Sampling Condition:	Cool & Intact
Project Number:	03B1417168	Sample Received By:	Tamara Oldaker
Project Location:	OXY - LEA COUNTY, NM		

Sample ID: RAMIREZ & SONS CALICHE PIT (H245739-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2024	ND	1.94	96.9	2.00	9.04	
Toluene*	<0.050	0.050	09/23/2024	ND	1.92	95.9	2.00	8.44	
Ethylbenzene*	<0.050	0.050	09/23/2024	ND	1.99	99.4	2.00	7.64	
Total Xylenes*	<0.150	0.150	09/23/2024	ND	5.95	99.2	6.00	7.49	
Total BTEX	<0.300	0.300	09/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	09/23/2024	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/20/2024	ND	220	110	200	2.49	
DRO >C10-C28*	<10.0	10.0	09/20/2024	ND	218	109	200	2.01	
EXT DRO >C28-C36	<10.0	10.0	09/20/2024	ND					

Surrogate: 1-Chlorooctane 87.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
** Samples not received at proper temperature of 6°C or below.
*** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Ensolum, LLC

Project Manager: Kelly Lowery

Address: 601 N. Marlandfield St. STE 400

City: Midland

State: TX Zip: 79701

Phone #: 214-733-3165

Email: klowery@ensolum.com

Project #: 03B1417168

Project Owner: -

Project Name: Remetz + Sons Caliche Pit

Project Location: Lea County, NM

Sampler Name: Kelly Lowery

FOR LAB USE ONLY

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: ~~Ensolum, LLC~~ Owl Design

Attn: Wade Dittman

Address:

City:

State:

Zip:

Phone #: 575 390 2888

Email:

PRESERV. SAMPLING

Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	REMARKS
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER: ACID/BASE:			
1425731	Remetz + Sons Caliche Pit	NA	C	1			X				9/19/24	1115	BTEX 8021 B TPH 8015 M Chloride 4500

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Relinquished By: Kelly
Date: 9/19/24
Time: 1200
Received By: Keon Shimada
Date: 9/20/24
Time: 1303

Delivered By: (Circle One) Keon Shimada
Sampler - UPS - Bus - Other:

Observed Temp. °C: 5.0
Corrected Temp. °C: 4.4

Sample Condition: Cool Hot
Intact Broken

Checked By: Keon Shimada (Initials)

Turnaround Time: Rush Standard

Thermometer ID: 444-#140
Correction Factor: -0.6°C TO

Vertical Result: Yes No
Add'l Phone #: _____

REMARKS: Paykey/AENonAFE

FOR-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 421812

QUESTIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2225058146
Incident Name	NAPP2225058146 SAND DUNES SOUTH CORRIDOR CTB @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Facility	[fAPP2127048458] Sand Dunes South Corridor CTB

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	SAND DUNES SOUTH CORRIDOR CTB
Date Release Discovered	08/15/2022
Surface Owner	Federal

Incident Details	
<i>Please answer all the questions in this group.</i>	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure Flow Line - Production Produced Water Released: 30 BBL Recovered: 10 BBL Lost: 20 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 421812

QUESTIONS (continued)

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.

With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: Wade Dittrich Title: Environmental Coordinator Email: wade_dittrich@oxy.com Date: 01/16/2025
--	---

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QUESTIONS, Page 3

Action 421812

QUESTIONS (continued)

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1000 (ft.) and ½ (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	12600
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	4980
GRO+DRO (EPA SW-846 Method 8015M)	3940
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	06/24/2024
On what date will (or did) the final sampling or liner inspection occur	11/04/2024
On what date will (or was) the remediation complete(d)	11/04/2024
What is the estimated surface area (in square feet) that will be reclaimed	3246
What is the estimated volume (in cubic yards) that will be reclaimed	74
What is the estimated surface area (in square feet) that will be remediated	3246
What is the estimated volume (in cubic yards) that will be remediated	74

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
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QUESTIONS, Page 4

Action 421812

QUESTIONS (continued)

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:

(Select all answers below that apply.)

(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	R360 ARTESIA LLC LANDFARM [FEEM0112340644]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

I hereby agree and sign off to the above statement	Name: Wade Dittrich Title: Environmental Coordinator Email: wade_dittrich@oxy.com Date: 01/16/2025
--	---

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS, Page 5

Action 421812

QUESTIONS (continued)

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
<i>Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS, Page 6

Action 421812

QUESTIONS (continued)

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	397620
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	11/05/2024
What was the (estimated) number of samples that were to be gathered	10
What was the sampling surface area in square feet	3772

Remediation Closure Request	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3246
What was the total volume (cubic yards) remediated	74
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	3246
What was the total volume (in cubic yards) reclaimed	74
Summarize any additional remediation activities not included by answers (above)	NA

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

I hereby agree and sign off to the above statement	Name: Wade Dittrich Title: Environmental Coordinator Email: wade_dittrich@oxy.com Date: 01/16/2025
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Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS, Page 7

Action 421812

QUESTIONS (continued)

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
<i>Only answer the questions in this group if all reclamation steps have been completed.</i>	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 421812

CONDITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 421812
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
crystal.walker	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	1/22/2025
crystal.walker	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. The OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	1/22/2025
crystal.walker	A revegetation report will not be accepted until revegetation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	1/22/2025
crystal.walker	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	1/22/2025